(District Name)
Water Management Plan
2011 Criteria

Date of first draft – (date)
Date of final – (date)

Index

Section I: Description of the District

District Name: _____

Contact Name: _____

Title: _____

Telephone: _____

E-mail: _____

Web Address _____

A. History

1. Date district formed: _____ *Date of first Reclamation contract*:_____

Original size (acres): _____ *Current year (last complete calendar year)*: _____

2. Current size, population, and irrigated acres

	(enter data year)
Size (acres)	
Population served (urban connections)	
Irrigated acres	

3. Water supplies received in current year

Water Source	*AF*
Federal urban water (Tbl 1)	
Federal agricultural water (Tbl 1)	
State water (Tbl 1)	
Other Wholesaler (define) (Tbl 1)	
Local surface water (Tbl 1)	
Upslope drain water (Tbl 1)	
District groundwater (Tbl 2)	
Banked water (Tbl 1)	
Transferred water (Tbl 1)	
Recycled water (Tbl 3)	
Other (define) (Tbl 1)	
Total	

4. Annual entitlement under each right and/or contract

	AF	*Source*	*Contract #*	*Availability period(s)*
Reclamation Urban AF/Y				
Reclamation Agriculture AF/Y				
Other AF/Y				
Other AF/Y				

5. Anticipated land-use changes. For Ag contractors, also include changes in irrigated acres.

6. Cropping patterns (Agricultural only)

List of current crops (crops with 5% or less of total acreage) can be combined in the 'Other' category.

Original Plan (enter date)		*Previous Plan (enter date)*		*Current Plan*	
Crop Name	*Acres*	*Crop Name*	*Acres*	*Crop Name*	*Acres*
Other (<5%)		*Other (<5%)*		*Other (<5%)*	
Total		*Total*		*Total*	

(See Planner, Chapter 3, Addendum D for list of crop names)

7. Major irrigation methods (by acreage) (Agricultural only)

Original Plan (enter date)		*Previous Plan (enter date)*		*Current Plan*	
Irrigation Method	*Acres*	*Irrigation Method*	*Acres*	*Irrigation Method*	*Acres*
Level Basin		Level Basin		Level Basin	
Furrow		Furrow		Furrow	
Sprinkler		Sprinkler		Sprinkler	
Low-volume		Low-volume		Low-volume	
Multiple		Multiple		Multiple	
Other		*Other*		*Other*	
Total		*Total*		*Total*	

B. Location and Facilities

See Attachment A for maps containing the following: incoming flow locations, turnouts (internal flow), and outflow (spill) points, conveyance system, storage facilities, operational loss recovery system, district wells and lift pumps, water quality monitoring locations, and groundwater facilities.

1. Incoming flow locations and measurement methods

Location Name	*Physical Location*	*Type of Measurement Device*	*Accuracy*

2. Current year Agricultural Conveyance System

Miles Unlined - Canal	*Miles Lined - Canal*	*Miles Piped*	*Miles - Other*

3 Current year Urban Distribution System

Miles AC Pipe	*Miles Steel Pipe*	*Miles Cast Iron Pipe*	*Miles - Other*

4. Storage facilities (tanks, reservoirs, regulating reservoirs)

Name	*Type*	*Capacity (AF)*	*Distribution or Spill*

5. Description of the agricultural spill recovery system and outflow points.

6. Agricultural delivery system operation (check all that apply)

Scheduled	*Rotation*	*Other (describe)*

7. Restrictions on water source(s)

Source	*Restriction*	*Cause of Restriction*	*Effect on Operations*

8. Proposed changes or additions to facilities and operations for the next 5 years

C. Topography and Soils

1. Topography of the district and its impact on water operations and management

2. District soil association map (Agricultural only)
See Attachment A, District Soils Map

3. Agricultural limitations resulting from soil problems (Agricultural only)

Soil Problem	*Estimated Acres*	*Effect on Water Operations and Management*
Salinity		
High-water table		
High or low infiltration rates		
Other (define)		

D. Climate

1. General climate of the district service area

	Jan	*Feb*	*Mar*	*Apr*	*May*	*Jun*	*Jul*	*Aug*	*Sep*	*Oct*	*Nov*	*Dec*	*Annual*
Avg Precip.													
Avg Temp.													
Max. Temp.													
Min. Temp													
ETo													

Weather station ID _____ *Data period: Year* _____ *to Year* _____

ET Station ID _____ *Average annual frost-free days:* _____

2. Impact of microclimates on water management within the service area

E. Natural and Cultural Resources

1. Natural resource areas within the service area

Name	*Estimated Acres*	*Description*

2. Description of district management of these resources in the past or present

3. Recreational and/or cultural resources areas within the service area

Name	*Estimated Acres*	*Description*

F. Operating Rules and Regulations

1. Operating rules and regulations

See Attachment B, District Rules and Regulations (water related)

2. Water allocation policy (Agricultural only)
See Attachment B, Page (insert page number here)
Summary -

3. Official and actual lead times necessary for water orders and shut-off (Agricultural only)
See Attachment B, Page (insert page number here)
Summary -

4. Policies regarding return flows (surface and subsurface drainage from farms) and outflow (Agricultural only)
See Attachment B, Page (insert page number here)
Summary -

5. Policies on water transfers by the district and its customers
See Attachment B, Page (insert page number here)
Summary -

G. Water Measurement, Pricing, and Billing

1. Agricultural Customers
Refer to BMP A.1. Information on water measurement for agricultural contractors is completed under BMP A.1 on page 4-15.

2. Urban Customers

a. *Total number of connections* _____

b. Total number of metered connections _____

c. Total number of connections not billed by quantity _____

d. Percentage of water that was measured at delivery point _____

e. Percentage of delivered water that was billed by quantity _____

f. Measurement device table

Meter Size and Type	*Number*	*Accuracy* (+/-percentage)*	*Reading Frequency (Days)*	*Calibration Frequency (Months)*	*Maintenance Frequency (Months)*
5/8-3/4"					
1"					
1 ½"					
2"					
3"					
4"					

6"					
8"					
10"					
Compound					
Turbo					
Other (define)					
Total					

*Documentation verifying the accuracy of measurement devices must be submitted with Plan and included as Attachment C.

3. Agricultural and Urban Rates

a. Current year agricultural and /or urban water charges - including rate structures and billing frequency

See Attachment B, Page (insert page number here), for current year rate ordinance

b. Annual charges collected from agricultural customers

Fixed Charges			
Charges ($ unit)	*Charge units $/acre, etc.*	*Units billed during year acres, etc.*	*$ collected ($ times units)*

Volumetric charges			
Charges ($ unit)	*Charge units $/AF, etc.*	*Units billed during year AF, etc.*	*$ collected ($ times units)*

Annual charges collected from urban customers

Fixed Charges			
Charges ($ unit)	*Charge units ($/meter size) etc.*	*Units billed during year (by meter size) etc.*	*$ collected ($ times units)*

Volumetric charges			
Charges ($ unit)	*Charge units ($/HCF), etc.*	*Units billed during year HCF, Kgal, etc.*	*$ collected ($ times units)*

See Attachment C Page (insert page number here), District Sample Bills

c. Describe the contractor's record management system

H. Water Shortage Allocation Policies

1. Current year water shortage policies or shortage response plan - specifying how reduced water supplies are allocated

See Attachment D, page (insert page number here), District Water Shortage Plan

2. Current year policies that address wasteful use of water and enforcement methods

See Attachment B, page (insert page number here)

I. Evaluate Policies of Regulatory Agencies Affecting the Contractor and Identify Policies that Inhibit Good Water Management.

Discuss possible modifications to policies and solutions for improved water management.

Section II: Inventory of Water Resources

A. Surface Water Supply

1. Surface water supplies in acre feet, imported and originating within the service area, by month (Table 1).
See Chapter 5, Water Inventory Tables, Table 1

2. Amount of water delivered to the district by each of the district sources for the last 10 years
See Chapter 5, Water Inventory Tables, Table 8.

B. Groundwater Supply

1. Groundwater extracted by the district and delivered, by month (Table 2)
See Chapter 5, Water Inventory Tables, Table 2

2. Groundwater basin(s) that underlies the service area

Name	*Size (Square Miles)*	*Usable Capacity (AF)*	*Safe Yield (AF/Y)*

3. Map of district-operated wells and managed groundwater recharge areas
See Attachment A, for District Map of Groundwater Facilities

4. Description of conjunctive use of surface and groundwater
(Please review Guidebook definition of conjunctive use)

5. Groundwater Management Plan
See Attachment F, Groundwater Management Plan

6. Groundwater Banking Plan
See Attachment G, Groundwater Banking Plan

C. Other Water Supplies

1. "Other" water used as part of the water supply – Describe supply
See Chapter 5, Water Inventory Tables, Table 1

D. Source Water Quality Monitoring Practices

1. Potable Water Quality (Urban only)
See Attachment H – District Annual Potable Water Quality Report

2. Agricultural water quality concerns: *Yes* _____ *No* _____
(If yes, describe)

3. Description of the agricultural water quality testing program and the role of each participant, including the district, in the program

4. *Current water quality monitoring programs for surface water by source (Agricultural only)*

Analyses Performed	*Frequency*	*Concentration Range*	*Average*

Current water quality monitoring programs for groundwater by source (Agricultural only)

Analyses Performed	*Frequency*	*Concentration Range*	*Average*

E. Water Uses within the District

1. Agricultural
See Chapter 5, Water Inventory Tables, Table 5 - Crop Water Needs

2. Types of irrigation systems used for each crop in current year

Crop name	*Total Acres*	*Level Basin - acres*	*Furrow - acres*	*Sprinkler – acres*	*Low Volume - acres*	*Multiple methods - acres*
TOTAL						

3. *Urban use by customer type in current year*

Customer Type	*Number of Connections*	*AF*
Single-family		
Multi-family		
Commercial		
Industrial		
Institutional		
Landscape irrigation		
Wholesale		
Recycled		
Other (specify)		
Other (specify)		
Other (specify)		
Unaccounted for		
Total		

4. Urban Wastewater Collection/Treatment Systems serving the service area

Treatment Plant	*Treatment Level (1, 2, 3)*	*AF*	*Disposal to / uses*
	Total		
Total discharged to ocean and/or saline sink			

5. Groundwater recharge in current year (Table 6)

Recharge Area	*Method of Recharge*	*AF*	*Method of Retrieval*
	Total		

*6a. Transfers and exchanges **into** the service area in current year – (Table 1)*

From Whom	*To Whom*	*AF*	*Use*
	Total		

*6b. Transfers and exchanges **out** of the service area in current year – (Table 6)*

From Whom	*To Whom*	*AF*	*Use*
	Total		

7. Wheeling, or other transactions in and out of the district boundaries – (Table 6)

From Whom	*To Whom*	*AF*	*Use*
	Total		

8. Other uses of water

Other Uses	*AF*

F. Outflow from the District (Agricultural only)

See Facilities Map, Attachment A, for the location of surface and subsurface outflow points, outflow measurement points, outflow water-quality testing locations

1. Surface and subsurface drain/outflow

Outflow point	*Location description*	*AF*	*Type of measurement*	*Accuracy (%)*	*% of total outflow*	*Acres drained*

Outflow point	*Where the outflow goes (drain, river or other location)*	*Type Reuse (if known)*

2. Description of the Outflow (surface and subsurface) water quality testing program and the role of each participant in the program

3. Outflow (surface drainage & spill) Quality Testing Program

Analyses Performed	*Frequency*	*Concentration Range*	*Average*	*Reuse limitation?*

Outflow (subsurface drainage) Quality Testing Program

Analyses Performed	*Frequency*	*Concentration Range*	*Average*	*Reuse limitation?*

4. Provide a brief discussion of the District's involvement in Central Valley Regional Water Quality Control Board programs or requirements for remediating or monitoring any contaminants that would significantly degrade water quality in the receiving surface waters.

Districts included in the drainage problem area, as identified in "A Management Plan for Agricultural Subsurface Drainage and Related Problems on the Westside San Joaquin Valley (September 1990)," should also complete Water Inventory Table 7 and Addendum C (include in plan as Attachment J)

G. Water Accounting (Inventory)

Go To Chapter 5 for Agricultural Water Inventory Tables and Instructions.

Go To Chapter 6 for Urban Water Inventory Tables and Instructions.

Section III: Best Management Practices (BMPs) for Agricultural Contractors

A. Critical Agricultural BMPs

1. *Measure the volume of water delivered by the district to each turnout with devices that are operated and maintained to a reasonable degree of accuracy, under most conditions, to +/- 6%*

   a. *Number of delivery points (turnouts and connections)* _____

   b. *Number of delivery points serving more than one farm* _____

   c. *Number of measured delivery points (meters and measurement devices)* _____

   d. *Percentage of delivered water that was measured at a delivery point* _____

   e. *Total number of delivery points not billed by quantity* _____

   f. *Delivery point measurement device table*

Measurement Type	*Number*	*Accuracy* (+/- %)*	*Reading Frequency (Days)*	*Calibration Frequency (Months)*	*Maintenance Frequency (Months)*
Orifices					
Propeller meter					
Weirs					
Flumes					
Venturi					
Metered gates					
Acoustic doppler					
Other (define)					
Total					

**Documentation verifying the accuracy of measurement devices must be submitted with Plan and included in Attachment C.*

2. *Designate a water conservation coordinator to develop and implement the Plan and develop progress reports*

Name: _____ *Title:* _____

Address: _____

Telephone: _____ *E-mail:* _____

Provide the job description and minimum qualifications

3. Provide or support the availability of water management services to water users
See Attachment H, Notices of District Education Programs and Services Available to Customers.

a. On-Farm Evaluations

1) On farm irrigation and drainage system evaluations using a mobile lab type assessment

	Total in district	*# surveyed last year*	*# surveyed in current year*	*# projected for next year*	*# projected 2nd yr in future*
Irrigated acres					
Number of farms					

2) Timely field and crop-specific water delivery information to the water user

b. Real-time and normal irrigation scheduling and crop ET information

c. Surface, ground, and drainage water quantity and quality data provided to water users

d. Agricultural water management educational programs and materials for farmers, staff, and the public

Program	*Co-Funders (If Any)*	*Yearly Targets*

See Attachment H for samples of provided materials and notices

e. other

4. Pricing structure - based at least in part on quantity delivered
Adopt a water pricing structure based on the measured quantity delivered

5. Evaluate and improve efficiencies of district pumps

Describe the program to evaluate and improve the efficiencies of the contractor's pumps.

	Total in district	*# surveyed last year*	*# surveyed in current year*	*# projected for next year*
Wells				
Lift pumps				

B. Exemptible BMPs for Agricultural Contractors

(See Planner, Chapter 2, Addendum B for examples of exemptible conditions)

1. Facilitate alternative land use

Drainage Characteristic	*Acreage*	*Potential Alternate Uses*
High water table (<5 feet)		
Poor drainage		
Groundwater Selenium concentration > 50 ppb		
Poor productivity		

Describe how the contractor encourages customers to participate in these programs.

2. Facilitate use of available recycled urban wastewater

Sources of Recycled Urban Waste Water	*AF/Y Available*	*AF/Y Currently Used in District*

3. Facilitate the financing of capital improvements for on-farm irrigation systems

Program	*Description*

4. Incentive pricing

Describe incentive rate structure and purpose.

5. a) Line or pipe ditches and canals

Canal/Lateral (Reach)	*Type of Improvement*	*Number of Miles in Reach*	*Estimated Seepage (AF/Y)*	*Accomplished/ Planned Date*

b) Construct/line regulatory reservoirs

Reservoir Name	*Location*	*Describe improved operational flexibility and AF savings*

6. Increase flexibility in water ordering by, and delivery to, water users

See Attachment I, contractor 'agricultural water order' form

7. Construct and operate district spill and tailwater recovery systems

Distribution System Lateral	*Annual Spill (AF/Y)*	*Quantity Recovered and reused (AF/Y)*
Total		

Drainage System Lateral	*Annual Drainage Outflow (AF/Y)*	*Quantity Recovered and reused (AF/Y)*
Total		

Describe facilities that resulted in reduced spill and tailwater

8. *Plan to measure outflow.*

Total # of outflow (surface) locations/points _____
Total # of outflow (subsurface) locations/points _____
Total # of measured outflow points _____
Percentage of total outflow (volume) measured during report year _____

Identify locations, prioritize, determine best measurement method/cost, submit funding proposal

Location & Priority	*Estimated cost (in $1,000s)*				
	Year 1	*Year 2*	*Year 3*	*Year 4*	*Year 5*

9. Optimize conjunctive use of surface and groundwater
Describe the potential for increasing conjunctive use of surface and groundwater.

10. Automate distribution and/or drainage system structures
Identify locations where automation would increase delivery flexibility and reduce spill and losses. Describe program to achieve these benefits and estimate the annual water savings.

11. Facilitate or promote water customer pump testing and evaluation
See Attachment H, Notices of District Education Programs and Services Available to Customers

12. *Mapping*

GIS maps	*Estimated cost (in $1,000s)*				
	Year 1	*Year 2*	*Year 3*	*Year 5*	*Year 6*
Layer 1 – Distribution system					
Layer 2 – Drainage system					
Suggested layers:					
Layer 3 – Groundwater information					
Layer 4 – Soils map					
Layer 5 – Natural & cultural resources					
Layer 6 – Problem areas					

C. Provide a 3-Year Budget for Implementing BMPs

1. Amount actually spent during current year.

Year 2012 or Year 1			*Actual Expenditure*	
BMP #		*BMP Name*	*(not including staff time)*	*Staff Hours*
A	*1*	*Measurement*	*$0*	*0*
	2	*Conservation staff*	*$0*	*0*
	3	*On-farm evaluation /water delivery info*	*$0*	*0*
		Irrigation Scheduling	*$0*	*0*
		Water quality	*$0*	*0*
		Agricultural Education Program	*$0*	*0*
	4	*Quantity pricing*	*$0*	*0*
	5	*Contractor's pumps*	*$0*	*0*
B	*1*	*Alternative land use*	$0	0
	2	*Urban recycled water use*	$0	0
	3	*Financing of on-farm improvements*	$0	0
	4	*Incentive pricing*	$0	0
	5	*Line or pipe canals/install reservoirs*	$0	0
	6	*Increase delivery flexibility*	$0	0
	7	*District spill/tailwater recovery systems*	$0	0
	8	*Measure outflow*	*$0*	*0*
	9	*Optimize conjunctive use*	$0	0
	10	*Automate canal structures*	$0	0
	11	*Customer pump testing*	$0	0
	12	*Mapping*	$0	*0*
		Total	$0	0

2. Projected budget summary for the next year.

Year 2013 or Year 2			*Budgeted Expenditure*	
BMP #		*BMP Name*	*(not including staff time)*	*Staff Hours*
A	*1*	*Measurement*	*$0*	*0*
	2	*Conservation staff*	*$0*	*0*
	3	*On-farm evaluations/water delivery info*	*$0*	*0*

		Irrigation Scheduling	*$0*	*0*
		Water quality	*$0*	*0*
		Agricultural Education Program	*$0*	*0*
	4	*Quantity pricing*	*$0*	*0*
	5	*Contractor's pumps*	*$0*	*0*
B	*1*	*Alternative land use*	$0	0
	2	*Urban recycled water use*	$0	0
	3	*Financing of on-farm improvements*	$0	0
	4	*Incentive pricing*	$0	0
	5	*Line or pipe canals/install reservoirs*	$0	0
	6	*Increase delivery flexibility*	$0	0
	7	*District spill/tailwater recovery systems*	$0	0
	8	*Measure outflow*	*$0*	*0*
	9	*Optimize conjunctive use*	$0	0
	10	*Automate canal structures*	$0	0
	11	*Customer pump testing*	$0	0
	12	*Mapping*	$0	*0*
		Total	$0	0

3. Projected budget summary for 3rd year.

Year 2014 or Year 3

BMP #		*BMP Name*	*Budgeted Expenditure (not including staff time)*	*Staff Hours*
A	*1*	*Measurement*	*$0*	*0*
	2	*Conservation staff*	*$0*	*0*
	3	*On-farm evaluations/water delivery info*	*$0*	*0*
		Irrigation Scheduling	*$0*	*0*
		Water quality	*$0*	*0*
		Agricultural Education Program	*$0*	*0*
	4	*Quantity pricing*	*$0*	*0*
	5	*Contractor's pumps*	*$0*	*0*
B	*1*	*Alternative land use*	$0	0
	2	*Urban recycled water use*	$0	0
	3	*Financing of on-farm improvements*	$0	0
	4	*Incentive pricing*	$0	0
	5	*Line or pipe canals/install reservoirs*	$0	0
	6	*Increase delivery flexibility*	$0	0
	7	*District spill/tailwater recovery systems*	$0	0
	8	*Measure outflow*	*$0*	*0*
	9	*Optimize conjunctive use*	$0	0
	10	*Automate canal structures*	$0	0
	11	*Customer pump testing*	$0	0
	12	*Mapping*	$0	*0*
		Total	$0	0

Section IV: Best Management Practices for Urban Contractors

A. Urban BMPs

Foundational BMPs

1. Utility Operations Programs
    - 1.1. Operations Practices
        - A.1) Conservation Coordinator
        - A.2) Water waste prevention
        - A.3) Wholesale agency assistance programs
    - 1.2. Water Loss Control
    - 1.3. Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections
    - 1.4. Retail Conservation Pricing

2. Education Programs
    - 2.1. Public Information Programs
    - 2.2. School Education Programs

Programmatic BMPs

3. Residential
    - A.1) Residential assistance program
    - A.2) Landscape water survey
    - A.3) High-efficiency clothes washers (HECWs)
    - A.4) WaterSense Specification (WSS) toilets
    - A.5) WaterSense Specifications for residential development

4. Commercial, Industrial, and Institutional (CII)

5. Landscape

B. Provide a 3-Year Budget for Expenditures and Staff Effort for BMPs

1. Amount actually spent during current year.

Year 2012 or Year 1 *BMP #* *BMP Name*	*Projected Expenditures (not including staff hours)*	*Staff Hours*
1. Utilities Operations		
1.1 Operations Practices	*$0*	*0*
1.2 Water Loss Control	*$0*	*0*
1.3 Metering	*$0*	*0*
1.4 Retail Conservation Pricing	*$0*	*0*
2. Education Programs		
2.1 Public Information Programs	*$0*	*0*
2.2 School Education Programs	*$0*	*0*
3. Residential	*$0*	*0*
4. CII	*$0*	*0*
5. Landscape	*$0*	*0*
Total	*$0*	*0*

2. Projected budget summary for 2nd year.

Year 2013 or Year 2 BMP # BMP Name	Projected Expenditures (not including staff hours)	Staff Hours
1. Utilities Operations		
1.1 Operations Practices	*$0*	*0*
1.2 Water Loss Control	*$0*	*0*
1.3 Metering	*$0*	*0*
1.4 Retail Conservation Pricing	*$0*	*0*
2. Education Programs		
2.1 Public Information Programs	*$0*	*0*
2.2 School Education Programs	*$0*	*0*
3. Residential	*$0*	*0*
4. CII	*$0*	*0*
5. Landscape	*$0*	*0*
Total	*$0*	*0*

3. Projected budget summary for 3rd year.

Year 2014 or Year 3 BMP #	BMP Name	Projected Expenditures (not including staff hours)	Staff Hours
1.	*Utilities Operations*		
	1.1 Operations Practices	*$0*	*0*
	1.2 Water Loss Control	*$0*	*0*
	1.3 Metering	*$0*	*0*
	1.4 Retail Conservation Pricing	*$0*	*0*
2.	*Education Programs*		
	2.1 Public Information Programs	*$0*	*0*
	2.2 School Education Programs	*$0*	*0*
3.	*Residential*	*$0*	*0*
4.	*CII*	*$0*	*0*
5.	*Landscape*	*$0*	*0*
	Total	*$0*	*0*